

of said discrete event sequentially and stores the processed discrete event.

Please cancel claim 28, without prejudice.

REQUEST FOR RECONSIDERATION

No new matter is added by these amendments, and the amendments to claims 1, 14, and 27 are fully supported by the specification. Applicants respectfully request that the Examiner enters these amendments and that the Examiner reconsiders the above-captioned patent application in view of the foregoing amendments and the following remarks.

Upon entry of these amendments, claims 1-27 will be pending in the above-captioned patent application. As per the Examiner's request and in order to expedite the processing of the application, Applicants are enclosing the text of all claims remaining in the application after entry of the foregoing amendments. Office Action, Page 13, Lines 1-9.

REMARKS

1. Rejections

Applicants acknowledge with appreciation that the Examiner has allowed claims 8, 9, 22, and 23. However, claims 1, 4-7, 10-15, 18-21, and 24-26 stand rejected under 35 U.S.C. § 103 as allegedly rendered obvious by U.S. Patent No. 5,179,702 to Spix et al. ("Spix") in view of U.S. Patent No. 5,305,454 to Record et al. ("Record"). Further, claims 2, 3, 16, 17, 27, and 28 stand rejected under 35 U.S.C. § 103 as allegedly rendered obvious by Spix in view of Record, and further in view of U.S. Patent No. 5,303,297 to Hillis. These rejections were made **final** by this Office Action. Applicants respectfully disagree.

2. Claims 1, 14, and 27

a. Definition of Segments, Events, and Threads

In response to the previous Office Action, mailed January 17, 1996, Applicants argued "that a thread cannot be both a segment and an independent sub-event, as claimed. As recited in claims 1, a segment comprises a plurality of discrete events, each discrete event comprising a plurality of independent sub-events." Office Action, Page 2, Lines 7-9. The Office Action noted that, as originally filed, claim 1 recited that "each segment compris[es] a sequence of at least one discrete event to be processed." (Emphasis added.) Consequently, the Office Action asserted that "a single discrete event meets the limitations associated with a 'segment'." Office Action, Page 2, Lines 10-12 (emphasis in original). Therefore, Applicants have amended claims 1, 14, and 27 to describe "a

segment comprising a sequence of a plurality of discrete events,” to conform the language of these claims with the arguments in Applicants’ previous response. (Emphasis added.)

The Office Action again contends that “Spix teaches that each independent ‘sub-event’ (i.e., ‘thread’) is processed sequentially as determined by priority . . .” Office Action, Page 6, Lines 22-24. The Office Action acknowledges, however, that “a clear distinction exists between an event and a thread.” Office Action, Page 2, Lines 13-15. Because the “segment” is described as executable, the Office Action interprets the scope of the term “segment” to include a discrete event and the code, process(es), or thread(s) that process or handle the discrete event. Office Action, Page 3, Lines 3-6. Further, the Office Action notes that it is the claimed subject matter, and not the specification, that defines the invention, and consequently contends that “segment” is entitled to a broad interpretation. Office Action, Page 5, Lines 7-11.

The issues raised by the Office Action’s assertions are (1) whether Spix’s “process queues” describe Applicants’ “segments” and (2) whether Spix’s “threads” describe Applicants’ “sub-events.” Office Action, Page 6, Lines 20-24. In view of the foregoing amendments, Applicants maintain that the Office Action has provided no evidence that Spix’s “process queues” comprise a sequence of “a plurality of” discrete events to be processed. Appl’n, Claim 1 (as amended). Further, the Office Action’s earlier acknowledgment that “a clear distinction exists between an event and a thread” (Office Action, Page 2, Lines 13-15) contradicts its later contention that a sub-event is a thread. Office Action, Page 6, Lines 22-24 (“each independent ‘sub-event’ (i.e., ‘thread’”). Moreover, according to Spix, “[a] thread is a part of a program that is logically independent from another part of the program and can therefore be executed in parallel with other threads of the program.” Spix, Column 2, Lines 9-12. Thus, a thread is an independent sequence of logic that may be executed separably, and contrary to the Office Action’s assertion, a sub-event is not a thread.

In the specification, Applicants explain that:

Batch processing . . . comprises processing a plurality of discrete events. As used herein, the term “discrete event” is not limited to a time specific occurrence, but rather a collection of data which is to be processed to generate an outcome. Preferably, each discrete event comprises a plurality of sub-events. Each sub-event is also data which is to be processed. In a preferred embodiment of the present invention, when applied to the cellular phone customer account processing, each customer account to be processed is treated as a discrete event. Further, since a number of details regarding the customer account must be processed, for example,

recurring charges, non-recurring charges, taxes, customer calls, accounts receivable, etc., each of the details is treated as a sub-event which may be processed separately. Appl'n, Page 22, Lines 13-22 (emphasis added). Clearly, a sub-event, e.g., data, may be processed, but is not executed. Similarly, a thread may be executed in order to process a sub-event. Therefore, Applicants maintain that Spix's process queue is not a segment and that a thread is not an independent sub-event.

b. Processing Order

In Applicants' response to the previous Office Action, Applicants argued that "Spix discloses and teaches using priority. Prioritization schemes are not sequential." See Office Action, Page 4, Line 1. In response, the Office Action asserts "that processes or threads executed in a particular priority are still executed sequentially in the order determined by their priority." Office Action, Page 4, Lines 1-3 (emphasis added). Nevertheless, as discussed below, priority processing, sequential processing, concurrent processing, and serial processing are different and distinct processing methods. Further, although the Office Action asserts that Spix describes "concurrent" program execution, the cited text does not support this assertion. See Office Action, Page 6, Lines 20-22.

Spix is directed to the processing of threads according to a predetermined priority (Spix, Column 29, Lines 53-68, and Column 30, Lines 1-19; see also Office Action, Page 6, Lines 22-24), and "priority processing" is "[a] method of computer time-sharing in which the order in which programs are processed is determined by a system of priorities, involving such factors as length, nature and source of the programs." McGraw-Hill Dictionary of Scientific and Technical Terms, 1495 (4th ed. 1989) (copy enclosed). Applicants' claimed invention, however, describes "concurrent" execution of segments and "sequential" processing of discrete events and sub-events. See Appl'n, Claims 1, 14, and 27 (as amended). Unlike Spix's "priority processing" of threads, Applicants' "concurrent processing" is defined as "[t]he conceptually simultaneous execution of more than one sequential program on a computer or a network of computers." Id. at 407 (copy enclosed). "Sequential processing," however, is defined as "[p]rocessing items in a collection of data according to some specified sequence of keys in contrast to serial processing." Id. at 1704 (copy enclosed);

emphasis added).¹

(i) Concurrent Execution

The Office Action asserts that “Spix teaches that a plurality of segments (i.e., ‘process queues’) are initiated to execute concurrently on at least one processor [col. 9, lines 10-15].” Office Action, Page 6, Lines 20-22 (emphasis added). Nevertheless, the cited text of Spix merely states that a User-Side Scheduler “can both place work in the request queues in the OSSR [sic] and look for work to be done in the same request queues.” Spix, Column 9, Lines 11-14. Spix clearly states that “[t]he order of the work to be done in the request queue is determined by prioritization of the processes.” Id. at Lines 14-15 (emphasis added). Therefore, Spix describes priority processing and does not teach concurrent execution of segments.

(ii) Sequential Processing

The Office Action contends that, despite the deficiencies of Spix, Record “teaches events and related ‘sub-events’ that are processed or handled in a sequential manner: ‘A program can specify interest in a combination of events of the same or different types and if the propagation mode is selected, each event handler in a sequence which receives notification of an event can decide to propagate any number or none of the event signals of interest.’” Office Action, Page 3, Lines 19-23 (quoting Record, Column 3, Lines 12-18 (emphasis in original)). Applicants’ claimed invention describes the processing of a plurality of discrete events in a batch processing environment. Record, however, describes an operating system which manages resources for handling events. Specifically, Record describes a first event handler determining whether a second event handler should be notified of an event and the second event handler determining whether a third event handler should be notified of the event. See Record, Column 16, Lines 3-8; **Fig. 8**. Record explains that “[i]n this manner, the event notification can be propagated from event handler to event handler in sequence, but any event handler in the sequence which receives notification can block subsequent propagation of the event notification.” Record, Abstract.

In Record, “[a]fter receiving notification that the event monitor is satisfied, the event handler can retrieve and process event data. The manner of interpreting the event data is based on

¹ “Serial processing” is defined as “[p]rocessing items in a collection of data in the order that they appear in the storage device, in contrast to sequential processing.” Id. at 1705 (copy enclosed).

a private protocol between the event signaler and event handler, and is established separately for each named event. The event management services within operating system 11 provides a channel for delivering the event notification and event data to the event handler.” Record, Column 5, Lines 5-13 (emphasis added). The event monitor determines what types of events are received by the first event handler, and the first event handler determines whether later event handlers even receive the event data. Thus, Record employs the sequential screening of events to allocate event handlers to the processing of event data. Therefore, Applicants maintain that Record does not describe the sequential processing of discrete events and that the Office Action has not shown that the combination of Spix in view of Record discloses or suggests Applicants’ claimed invention having concurrent segment execution and sequential processing of discrete events. See Appl’n, Claims 1, 14, and 27 (as amended).

In Applicants’ previous response, Applicants also asserted that the Office Action has failed to show that there is a motivation to combine Spix with Record. Citing In re McLaughlin, the Office Action correctly points out that the motivation need not be expressly articulated in the references. 170 USPQ 209 (CCPA 1971). However, the Office Action then incorrectly relies on the “event handling capabilities” of the operating system environments described in Spix and the known uses of the IBM equipment described in Record to allegedly provide a motivation to combine these references. Office Action, Page 4, Lines 14-22. Nevertheless, “[t]hat which is within the capabilities of one skilled in the art is not synonymous with obviousness.” In re Levengood, 28 USPQ2d 1300, 1302 (Bd of Pat. App. & Int’l. 1993); see also MPEP 2143.01 (citing Levengood with approval). That these references could be combined, does not demonstrate that a person of ordinary skill in the art would be motivated to combine them to arrive at the claimed invention. Id. at 1301. “The test under § 103 is not what ‘one might contemplate.’ The proper test is whether the references taken as a whole, would suggest the invention to one of ordinary skill in the art.” Medtronic Inc. v. Cardiac Pacemakers, Inc., 220 USPQ 97, 110 (Fed. Cir. 1983). Thus, the “legendary” capabilities of IBM equipment do not provide a motivation to combine these references to produce Applicants’ claimed invention.

Finally, while the Office Action notes that any judgment on obviousness is in some sense necessarily a reconstruction based upon hindsight reasoning (Office Action, Page 5, Lines 1-2), the appropriateness of such a “reconstruction” rests on the existence some motivation to combine the

cited references as suggested by the Office Action and the teaching of the elements of the claimed invention by the cited references. As discussed above, Applicants believe that the Office Action has failed to demonstrate such motivation and that Spix and Record fail to disclose or suggest all of the claimed elements. MPEP 2143. Further, the Office Action does not contend that Hillis provides the elements of Applicants' claimed invention that are missing from Spix in view of Record.

In view of the foregoing amendments and remarks, Applicant respectfully requests that the Examiner withdraws the rejections of claims 1, 14, and 27. Moreover, in accordance with MPEP 2143.03, “[i]f an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.” Therefore, Applicant respectfully requests that the Examiner withdraws the rejections of claims 2-7, 10-13, 15-21, and 24-26, as allegedly rendered obvious by Spix, alone or in combination with other references.

CONCLUSION

Applicants submit that this application, as amended, is in condition for allowance, and such disposition is earnestly solicited. If the Examiner believes that an interview, either in person or by telephone, with Applicants' representatives would further the prosecution of this application, we would welcome the opportunity to do so.

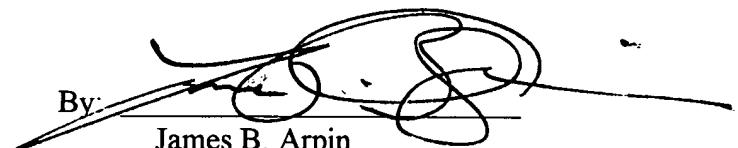
Respectfully submitted,
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Enclosures



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